tML® - FO Trunk Cable 1x MPO Female/1x MPO Female 12G62,5/125µ OM1 LSHF, Type C, Length xxx

trans data elektronik GmbH

Description

tML® is a patented, modular cabling system consisting of the three key components module, trunk cable and rack mount enclosure. The system components are 100 percent manufactured, pre-assembled and tested in Germany. They enable plug-and-play installation on site – especially in data centres, but also in industrial environments – within the shortest possible time. Heart of the system are the rear MPO/MTP® and Telco connectors, which can be used to connect at least six or twelve ports at a time. Depending on the module configuration, transfer rates of up to 400G are currently possible with SR4. The fibre optic and TP modules can be used together in a module carrier with a very high port density. The tde offers its tML® cabling system as a proven tML® standard system and in the highly innovative variants tML® 12, tML® 24, tML® 32 and now tML® 24+ System for extreme scalability and very easy migration to higher transmission rates such as 40G, 100G, 200G, 400G and 800G and more.

The tML® - FO trunk cable is intended for the connection of two tML®- FO Modules.

Technical Data

The tML®- FO trunk cable is preterminated with MPO/MTP®connectors on both ends. The end faces of the connectors are optimized by means of Lasercleaving and machine polish. The MPO/MTP®plug has a defined fiber hieght of 1 - 3.5µ. The max. adjacent fiber height difference is 0.2µm and for all fibers 0.3µm. All system components (modules, trunk cables and patch cords) are co-ordinated for the reaching of the performance particularly. The fan-out unit is optimized for tML® - Cable Mounting Bracket for Fan-out Units. The module is marked with sequential serial number and article number.

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FO Connectors

Type	MPO/MTP® Female Push Pull Locking (Beige)
Ferrule	12 Fiber MM Elite® ferrule, PPS
Boot colour	Black
Temperature range	-40°C to +75°C
Manufacturer	tde/US Conec

Optical Performance

Fiber	Type	Wavelength	Insertion loss typ.	Insertion loss max.	Return loss min.
50/125µ OM2	MPO/MTP®	850 nm	≤ 0.25 dB	0.45 dB	20 dB
62.5/125µ OM1	MPO/MTP®	850 nm	≤ 0.25 dB	0.45 dB	

FO Fan-Out

Fan-out length	50 mm
Ø Fan-out	16 mm

Vers. 17.12.2019

tde – trans data elektronik GmbH
Network components,
Cable technology and Fibre optics

ISO 9001, TL 9000
and ISO 14001 certified

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Ø Single unit	3.0 mm
Single unit length	78 ± 5 cm (not stepped)

FO Cables

ISO 11801 2nd edition

EN 50173-1:2002

IEC 60794-1

Construction

Cabletype	Universal U-DQ(ZN)BH for indoor and outdoor use
Lose tube	ø2.8 mm jelly filled loose tube
Strengh Member	Waterblocked E-Glass fiber elements
Sheath	1.5 mm blue FireBur® sheath, UV stabilised, IEC 50290-2-27

Fire rating

IEC 60332-1-2	Single vertical wire test
IEC 60754-1	No halogens
IEC 60754-2	No acid matters
IEC 61034-2	No dense smoke

Heat of combustion

Fiber count	MJ/km	KWh/m
2-16	1100	0.31

Mechanical properties

Maximum installation tensile strength	E1	1500 N (fiber strain less than 1/2 of proof test level)
Short term tensile strength	E1	1000 N (fiber strain less than 1/3 of proof test level)
Permanent tensile strength	E1	700 N (no attenuation change, fiber strain less than 1/4 of proof test level)
Compressive strength (crush)	E3	2000N

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Impact	E4	20 Nm (no attenuation change, no broken cable elements)
Torsion	E7	5 cycles ± 1 turn
Kink	E10	The cables do not form a kink when a loop is drawn together to a diameter of 200 mm
Min. Bending radius, unloaded	E11	R = 60 mm
Min. Bending radius, loaded	-	R = 100 mm
Temperature range	F1	Storage: -40°C to +60°C (short term up to 70 °C) Installation: -15°C to +40°C Operation: -30°C to +70°C
Water penetration	F5B	No water on free end
Nominal outer diameter	-	2 - 16 fibers: 7.5 mm
Nominal weight	-	2 - 16 fibers: 55 kg/km

FO Fiber

Type	Draka OM1 62.5/125µm multimode fiber (C02)

Standards and Norms	IEC 60793-2-10 Category A1b	ISO/IEC 11801 category OM1.
	EN 60793-2-10: type A1b	IEEE 802.3 - 2002. with amendment 802.3ae - 2002.
	TIA/EIA-492 AAAB	ANSI/TIA/EIA-568.B.3 – 2000
	EN 50173-1:2007 category OM1	IBM™ Fiber Optic Channel Links; ESCON™

Attenuation (of cable with fibers) according to IEC 60793-1-40

850 nm	≤ 3.2 dB/km
1300 nm	≤ 1.0 dB/km
Inhomogeneity of OTDR trace for any two 1000 metre fiber lengths	Max. 0.2 dB/km

Bandwidth according to IEC 60793-1-41

850 nm	200 MHz*km
1300 nm	600 MHz*km

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Group index of refraction according to IEC 60793-1-22

Group index of refraction at 850 nm	1.496
Group index of refraction at 1300 nm	1.491

Other properties according to IEC 60793-1-xx

Attribute	Measurement method	Limits
Core diameter	IEC/EN 60793-1-20	62.5 ± 2.5 µm
Cladding diameter	IEC/EN 60793-1-20	125.0 ± 1.0 µm
Cladding non-circularity	IEC/EN 60793-1-20	≤ 1.0%
Core non-circularity	IEC/EN 60793-1-20	≤ 5%
Core -cladding concentricity error	IEC/EN 60793-1-20	≤ 1.5 µm
Primary coating diameter - uncoloured	IEC/EN 60793-1-21	242 ± 7 µm
Primary coating diameter - coloured	IEC/EN 60793-1-21	250 ± 15 µm
Primary coating non-circularity	IEC/EN 60793-1-21	≤ 5%
Primary coating-cladding concentricity error	IEC/EN 60793-1-21	≤ 10 µm
Proof stress level	IEC/EN 60793-1-30	≥ 0.7 (≈ 1 %)
Typical average strip force	IEC/EN 60793-1-32	1.7 N
Strip force (peak)	IEC/EN 60793-1-32	1.3 N ≤ Fpeak.strip ≤ 8.9 N
Numerical aperture	IEC/EN 60793-1-43	0.200 ± 0.015

Art.-No.	Description
TML-MP/MP09B12Exxx	tML® - FO Trunk Cable 1x MPO Female/1x MPO Female 12E9/125µ OS2 LSHF, Type C, Length: xxx
TML-MP/MP50B12G3-xxx	tML® - FO Trunk Cable 1x MPO Female/1x MPO Female 12G50/125µ OM3 LSHF, Type C, Length: xxx
TML-MP/MP50B12G4-xxx	tML® - FO Trunk Cable 1x MPO Female/1x MPO Female 12G50/125µ OM4 LSHF, Type C, Length: xxx
TML-MP/MP50B12Gxxx	tML® - FO Trunk Cable 1x MPO Female/1x MPO Female 12G50/125µ OM2 LSHF, Type C, Length: xxx
TML-MP/MP62B12Gxxx	tML® - FO Trunk Cable 1x MPO Female/1x MPO Female 12G62,5/125µ OM1 LSHF, Type C, Length xxx

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